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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/597,866	06/20/2000	Michael James Heller	255/040	5697

34263 7590 10/28/2002

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EXAMINER

FORMAN, BETTY J

ART UNIT PAPER NUMBER

1634

DATE MAILED: 10/28/2002

17

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/597,866

**Applicant(s)**

HELLER ET AL.

**Examiner**

BJ Forman

**Art Unit**

1634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,7-9,13 and 15-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 2 4 7-9 13 15-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                              | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other: _____.                                   |

Art Unit: 1634

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 August 2002 has been entered.
2. This action is in response to papers filed 21 August 2002 in Paper No. 16 in which Applicant requested reconsideration of the previous rejections as presented in Applicant's Response After Final Rejection filed 22 July 2002 in Paper No. 14. Applicant has submitted no further arguments or amendments. All of Applicant's arguments of Paper No. 14 have been thoroughly reviewed and were discussed in the Advisory Action of Paper No. 15. For Applicant's convenience, the text of the Advisory Action is reiterated below.
3. The previous rejections in the Office Action of Paper No. 12 dated 15 April 2002 are maintained and reiterated below.

Currently claims 1, 2, 4, 7-9, 13 and 15-18 are under prosecution.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 1634

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1, 2, 4, 7, 9, 13 and 15-17 are rejected under 35 U.S.C. 102(3) as being anticipated by Hollis et al. (U.S. Patent No. 5,846,708, filed 23 April 1992).

Regarding Claim 1, Hollis et al disclose an apparatus for detection of a biological reaction between a sample and an active area of a biochip comprising: a biochip having an active area, the active area comprise a plurality of electronically addressable micro-locations, the micro-locations comprising an electrode and a permeation layer (i.e. disposable plate formed of glass, plastic,  $\text{Al}_2\text{O}_3$ ) having specific binding entities attached and a fluidic system comprising a flow cell adjacent to the biochip (Column 6, lines 29-67 and Claims 6-9). Additionally, they teach the active area optionally comprises a gel permeation layer (Column 21, lines 43-47).

Regarding Claim 2, Hollis et al disclose the apparatus wherein the fluidic system is in direct contact with the biochip (Column 6, lines 40-41 and Fig. 1-4).

Regarding Claim 4, Hollis et al disclose the apparatus wherein the flow cell substantially surrounds the active area of the biochip (Column 6, lines 29-67 and Fig. 1-4).

Regarding Claim 7, Hollis et al disclose the apparatus wherein the flow cell has a defined volume i.e. flow cells of defined size also have defined volume (Column 15, lines 12-37).

Art Unit: 1634

Regarding Claim 9, Hollis et al disclose the apparatus wherein the flow cell further includes an inlet port and an outlet port (Column 15, lines 28-42 and Fig. 19 and 20).

Regarding Claim 13, Hollis et al. disclose the apparatus wherein the biochip is disposed on a circuit board (Column 14, lines 49-65).

Regarding Claim 15, Hollis et al. disclose the circuit board further including wires connecting the biochip to the circuit board (Column 4, lines 23-31 and Fig. 1).

Regarding Claim 16, Hollis et al. disclose the circuit board is a printed circuit board i.e. semiconductor chip (Column 4, lines 28-31).

Regarding Claim 17, Hollis et al. disclose the circuit board wherein the wires are embedded in a protective material i.e. semiconductor or dielectric material (Column 14, lines 42-48).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hollis et al. (U.S. Patent No. 5,846,708, filed 23 April 1992) in view of Ebersole et al (U.S. Patent No. 5,658,732, filed 1 March 1995).

Regarding Claim 8, Hollis et al apparatus wherein the flow cell has a small volume (Column 15, lines 12-37) but they do not teach the volume from about 5 to 10 microliters. However, small hybridization volumes were well known in the art and Ebersole et al. teach a

Art Unit: 1634

motivation for reducing hybridization volumes i.e. reassociation kinetics are faster and the amount of costly reagents is reduced (Column 13, lines 62-67). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to minimize the small volumes in the apparatus of Hollis et al. and using routine experimentation determine the minimal volumes e.g. 5 to 10 microliters, to thereby optimize experimental results for the known benefits of minimized hybridization volumes i.e. increased speed and efficient use of reagents as taught by Ebersole et al. (Column 13, lines 62-67). It is noted that *In re Aller*, 220 F.2d 454,456, 105 USPQ 233,235 states where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum by routine experimentation.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hollis et al. (U.S. Patent No. 5,846,708, filed 23 April 1992).

Regarding Claim 18, Hollis et al. teach the apparatus wherein the electrodes are embedded in epoxy (Column 11, lines 5-15) but they do not teach the epoxide comprises ultraviolet light resistant epoxy. The courts have stated that a chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990) see MPEP § 2112.01. Because Hollis et al teach the electrodes are embedded in epoxy, It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made that the epoxide of Hollis et al comprise the claimed property of light resistance.

### **Response to Applicant's Arguments**

reiterated from the Advisory Action of Paper No. 15

9. Applicant argues that Hollis et al does not teach the permeation layer as defined in the specification on page 16, line 35-page 17, line 7 and therefore cannot anticipate the claimed invention. The argument has been considered but is not found persuasive for three reasons. First, the teaching on pages 16-17 of the specification cited by Applicant to define the claimed permeation layer describes Fig. 12-13 but does not define a permeation layer. Second, "permeation layer" is defined on page 33, lines 8-18 wherein the permeation layer is defined as comprising numerous materials including gels. Finally, Hollis et al disclose a gel layer (Column 20, lines 42-46). Therefore, Hollis discloses the structural components of the claimed invention. Applicant cites the examination of similar claims by another examiner wherein the novelty of the permeation layer was key. Applicant's citation of the examination and examiner are not relevant to the instant claims or instant examination and therefore are not deemed persuasive. It is acknowledged that Applicant does not find it necessary to discuss the merits of the rejections of Claims 8 and 18, but instead relies on the argument regarding the permeation layer. .

10. This is a RCE of applicant's earlier application having the same number. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 1634


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

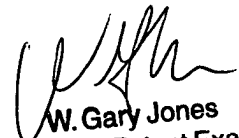
### **Conclusion**

11. No claim is allowed.
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (703) 306-5878. The examiner can normally be reached on 6:30 TO 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones can be reached on (703) 308-1152. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-8724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

  
BJ Forman, Ph.D.  
Patent Examiner  
Art Unit: 1634  
October 22, 2002

  
W. Gary Jones  
Supervisory Patent Examiner  
Technology Center 1600